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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,639	08/05/2003	Jong Hwan Kim	46500-000122/US	5474
30593	7590	12/21/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.				CONNOLLY, PATRICK J
P.O. BOX 8910		ART UNIT		PAPER NUMBER
RESTON, VA 20195		2877		

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/633,639	KIM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Patrick J. Connolly	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 17 October 2005.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-5 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 08 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____ .                                              |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____.                                                            | 6) <input type="checkbox"/> Other: _____ .                                  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Specification***

The amendments to the specification, filed October 17, 2005, are acknowledged.

### ***Drawings***

Figures 1, 2A and 2B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

**As to claim 1,** the section of the claim describing the detection step is unclear. It is unclear what is intended by “position”, whether this refers to a physical location on the optical disc or a location within the data set.

With further regard to the “detecting” section, it is unclear what is meant by “a peak as a thickness of a spacer layer and a cover layer respectively”. It is unclear whether this is meant to be a series of peaks, or a peaked plateau, and it is further unclear how this “peak” relates to the respective thicknesses of the spacer and cover layers.

Further regarding the “detecting” section, it is unclear what is meant by “length of an interference area”, whether this corresponds to a physical length, or some sort of scaled length within the data set. It is further unclear what is meant by “interference area”, whether this is a data set, or an interference image.

The “detecting” step also refers to “the Fast Fourier Transform”. There is insufficient antecedent basis for this limitation. The Examiner suggests that “the” be deleted from this limitation, which will render it clearer.

**As to claims 2 and 5,** the limitation “said converting step” is referenced. There is insufficient antecedent basis for this limitation. The Examiner suggests changing “said” to “the” in order to render the claim clearer.

**As to claim 4 and 5,** the limitation “reflecting the refractive index” has been objected to in the previous Office Action as being unclear. This is non-standard English, and the Examiner

has chosen to interpret it as meaning the refractive index is represented as a function of wavelength.

**With further regard to claim 4,** it is unclear what this is intended to mean. The claim is generally confusing, but the Examiner has interpreted it to mean that respective positions,  $d_1$  and  $d_2$ , correspond to peak values. These peak values are obtained by examining the refractive index as a function of wavelength.

**With further regard to claim 5,** the equations include a limitation of  $\Delta\lambda$ . The claim does not define this limitation or its relationship to  $\lambda$ .

The following rejection is based on the claims as best understood by the Examiner.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-5** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S.

Patent No. 5,440,141 to Horie (hereafter Horie).

**As to claim 1,** Horie discloses a method of measuring the thickness of a multi-layered sample including:

detecting an intensity of a reflected according to a wavelength of a light as spectrum data for each wavelength (see columns 9 and 10).

converting the spectrum data for each wavelength into a spectrum value, the spectrum value being a function of wavelength and refractive index (see column 10); and

detecting peaks in the intensity of the reflected light corresponding to the thicknesses of multiple layers, said peaks determined through Fast Fourier Transform of interference wavefronts (see bottom of column 10 through column 11).

**As to claim 3,** Horie discloses each layer having different refractive indices.

**As to claim 4,** Horie discloses calculating thicknesses on the basis of peaks, said peaks determined by refractive indices as functions of wavelength (see column 9).

**As to claims 2 and 5,** Horie discloses the relationships between the wavelength, refractive indices and integer values corresponding to the limitations of the instant claims (See columns 9-11, and equations 1 and 2).

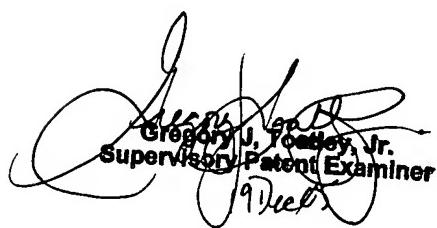
Art Unit: 2877

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Connolly whose telephone number is 571.272.2412. The examiner can normally be reached on 9:00 am - 7:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571.272.2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjc PJC  
17.16.2005



11684  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
9 Dec 05